

What Is Claimed Is:

1. Apparatus for closing a wound comprising:

an elongated substrate comprising a biocompatible material, the elongated substrate having a first surface; and

a multiplicity of barbs projecting from the first surface, the multiplicity of barbs having tissue-penetrating distal ends.

2. The apparatus of claim 1, wherein the elongated substrate further comprises a second surface, and the multiplicity of barbs projects from the first and second surfaces.

3. The apparatus of claim 2, wherein the elongated substrate further comprises portions defining a plurality of perforations that extend from the first surface to the second surface.

4. The apparatus of claim 3, wherein the plurality of perforations define suture eyelets.

5. The apparatus of claim 1, wherein the elongated substrate further comprises a coating of a therapeutic agent.

6. The apparatus of claim 1, wherein the elongated substrate is impregnated with a therapeutic agent.

7. The apparatus of claim 1 wherein the therapeutic growth factor is selected from a family of angiogenic growth factors.

8. The apparatus of claim 1, wherein each one of the multiplicity of barbs includes a shank coupling the tissue-penetrating distal end to the substrate, and one or more projections from the shank.

9. The apparatus of claim 8, wherein the multiplicity of barbs are cut from the substrate.

10. The apparatus of claim 1, wherein the elongated substrate has the form of a tube.

11. The apparatus of claim 10, wherein the tube includes an interior lumen forming the first surface.

12. The apparatus of claim 10, wherein the tube includes an exterior surface forming the first surface.

13. The apparatus of claim 1 further comprising a stent-like structure, wherein the elongated substrate forms a side anastomosis site of the apparatus.

14. The apparatus of claim 1, wherein the elongated substrate comprises a series of units interconnected by joints.

15. The apparatus of claim 1, further comprising a shield portion having a multiplicity of openings, the shield member disposed adjacent to the elongated substrate so that the multiplicity of openings is aligned with the multiplicity of barbs.

16. The apparatus of claim 1 further comprising a region of artificial cartilage coupled to the elongated substrate.

17. The apparatus of claim 1 further comprising a replacement intervertebral disc coupled to the elongated substrate.

18. A method for closing a tissue wound comprising:

providing a device comprising an elongated substrate of a biocompatible material having a first surface and a multiplicity of barbs projecting from the first surface;

positioning the elongated substrate within a wound so that the multiplicity of barbs is directed towards the tissue defining a perimeter of the wound; and

squeezing the perimeter of the wound against the multiplicity of barbs to adhere the perimeter of the wound to the elongated substrate.

19. The method of claim 18 wherein providing a device comprises providing a device coated or impregnated with a therapeutic agent, the method further comprising, during wound healing, releasing a predetermined amount of therapeutic agent into the vicinity of the wound.

20. A method for closing a tissue wound comprising:

providing a device comprising first and second elongated substrate halves, each of the first and second elongated substrate halves comprising a

biocompatible material having a first surface and a multiplicity of barbs projecting from the first surface;

positioning the first elongated substrate half within a wound so that the multiplicity of barbs is directed towards the tissue defining a first portion of the perimeter of the wound;

squeezing the first portion of the perimeter of the wound against the multiplicity of barbs to adhere the first portion of the perimeter of the wound to the first elongated substrate half;

positioning the second elongated substrate half within the wound so that the multiplicity of barbs is directed towards the tissue defining a second portion of the perimeter of the wound; and

squeezing the second portion of the perimeter of the wound against the multiplicity of barbs to adhere the second portion of the perimeter of the wound to the second elongated substrate half; and

moving the first and second substrate halves into apposition.

21. The method of claim 20 wherein moving the first and second substrate halves into apposition comprises threading suture material through eyelets in the first and second elongated substrate halves and knotting the suture material.